

Remarks/Arguments

Rejection of Claims 1-2, 7, 13-14, and 19 under 35 U.S.C. §103(a)

The Examiner rejected Claims 1-2, 7, 13-14, and 19 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,288,839 (Prager et al.) in view of US Patent No. 4,502,090 (Sloan).

Claim 1

Prager does not teach a heat-containing element fully enclosed within a housing

Amended Claim 1 recites: “a heat-containing element fully enclosed within said housing.” Assuming *arguendo* that Prager’s solid state mounting device is analogous to the heat-containing element recited in Claim 1, which is not the case, Prager does not teach that the device is within any type of housing, in particular, within a potted housing. Prager teaches that element 41 of Fig. 3 is a heat dissipating surface, but contains no further teaching regarding the surface. For example, there is no teaching that this surface is in a housing or part of a housing, in particular, a closed housing. Instead, the surface is represented with dashed lines and is “floating in space.”

Prager does not teach a bracket mounted to an interior surface of a housing

Amended Claim 1 recites: “a bracket mounted to an interior surface of said housing;” Assuming *arguendo* that assembly 20 in Fig. 3 of Prager is analogous to the bracket recited in Claim 1, which is not the case, element 20 is not mounted to any type of housing, in particular, to an interior surface of a potted housing. Element 20 is mounted to surface 41, which as shown above, is not a housing, in particular, not a potted housing. Assuming *arguendo* that surface 41 was a housing of any sort, which is not the case; there is no indication of what would constitute an interior surface of surface 41.

Sloan can teach a potted housing in Prager

In the Office Action, the Examiner stated that Murphy et al. fails to teach a potted housing. Applicants assume that the Examiner meant to refer to Prager and will proceed on that basis. The Examiner goes on to state that Sloan teaches a potted housing, i.e., that Sloan teaches

that the housing of Prager is potted. However, Prager does not teach any type of housing. That is, there is no housing in Prager to be modified by Sloan.

Sloan teaches against a heat-containing element fully enclosed within a potted housing

Assuming *arguendo* that Prager teaches all the elements of Claim 1 with the exception of a potted housing, which is not the case, Sloan fails to teach a potted housing as recited in Claim 1. Instead, Sloan teaches: “a combined metal head sink and mounting strap 44...” (col. 5, lines 15 and 16) “arranged so that the ends of the combined mounting strap and heat sink 44 protrude...” (col. 5, lines 21-23). This arrangement is illustrated in Fig. 3, which clearly shows that the heat sink for Sloan is extending outside of the housing, that is, the heat sink is not fully enclosed in the potted housing. Thus, Sloan teaches against the very heart of the invention recited in Claim 1, that is, a heat sink assembly fully enclosed within a potted assembly.

“A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997).”

There is no motivation to combine Prager and Sloan

The Examiner states: “It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the heat sink assembly within a potted housing of Prager et al. with that of Sloan for the purpose of having an environmentally sealed housing.” Prager does not teach any type of housing, in particular a potted housing. Therefore, the Examiner’s statement that Prager teaches a potted housing is incorrect. Since Prager does not teach a housing, there can be no motivation to combine Sloan’s potted housing with Prager. Assuming *arguendo* that Prager did teach a housing, which is not the case, there is no motivation to make the housing potted. Prager has no teaching that assembly 20 is to be subjected to destructive environmental conditions. Further, as is well known and discussed in the Background of the Invention, potting an enclosure hinders the operation of heat sink elements within the housing. Therefore, if Prager pots the assumed housing, then Prager is knowingly reducing the efficiency of assembly 20 for no apparent gain or advantage. If anything, there is significant reason for Prager not to pot an assumed housing, that is, modify according to Sloan.

For all the reasons noted above, Claim 1 is patentable over Prager and Sloan. Claims 2 and 7, dependent from Claim 1, enjoy the same distinction from the cited references. Applicants courteously request that the rejection be removed.

Claim 13

Claim 13 is a method claim paralleling Claim 1. Applicants have shown that Claim 1 is patentable over Prager and Sloan. Therefore, Claim 13 also is patentable over Prager and Sloan. Claims 14 and 19, dependent from Claim 13, enjoy the same distinction from the cited references. Applicants courteously request that the rejection be removed.

Rejection of Claims 3-5 and 15-17 under 35 U.S.C. §103(a)

The Examiner rejected Claims 3-5 and 15-17 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,288,839 (Prager et al.) in view of US Patent No. 4,502,090 (Sloan) as applied to the above claims, and further in view of US Patent No. 5,504,653 (Murphy et al.).

Applicants have shown that Claims 1 and 13 are patentable over Prager and Sloan. Murphy teaches a printed circuit board and does not cure the defects of Prager and Sloan with respect to Claims 1 and 13. Therefore, Claims 1 and 13 are patentable over Prager in view of Sloan and further in view Murphy. Claims 3-5 and 15-17, dependent from Claims 1 and 13, respectively, enjoy the same distinction from the cited references. Applicants courteously request that the rejection be removed.

Rejection of Claim 6 under 35 U.S.C. §103(a)

The Examiner rejected Claim 6 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,288,839 (Prager et al.) in view of US Patent No. 4,502,090 (Sloan) as applied to Claim 1, and further in view of US Patent No. 6,618,255 (Fairchild).

Applicants have shown that Claim 1 is patentable over Prager and Sloan. Fairchild teaches a storage system and does not cure the defects of Prager and Sloan with respect to Claim 1. Therefore, Claim 1 is patentable over Prager in view of Sloan and further in view Fairchild.

Claim 6, dependent from Claim 1, enjoys the same distinction from the cited references. Applicants courteously request that the rejection be removed.

Rejection of Claims 8-11 and 18 under 35 U.S.C. §103(a)

The Examiner rejected Claim 6 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,502,090 (Sloan) in view of US Patent No. 6,618,255 (Fairchild), and further in view of US Patent No. 4,288,839 (Prager et al.).

Claim 8

Sloan does not teach a heat sink fully enclosed in a potted housing

Amended Claim 8 recites: “a printed circuit board (PCB) with a heat sink, said PCB fully enclosed within said housing.” In contrast, Sloan teaches: “a combined metal head sink and mounting strap 44...” (col. 5, lines 15 and 16) “arranged so that the ends of the combined mounting strap and heat sink 44 protrude...” (col. 5, lines 21-23). This arrangement is illustrated in Fig. 3, which clearly shows that the heat sink for Sloan is extending outside of the housing, that is, the heat sink is not fully enclosed in the potted housing.

Sloan teaches against a heat sink fully enclosed within a potted housing

These arguments are presented above and for the sake of brevity are not repeated here.

Fairchild does not teach a bracket connected to a wall of a potted housing

Amended Claim 8 recites: “a brass bracket connected to an interior wall of said housing;” Fairchild is non-analogous to a potted housing. Fairchild teaches a fastening system for storage devices. Bracket 16 in Fairchild is not part of a heat sink assembly – it is a storage mechanism.

Prager does not teach a PCB

Amended Claim 8 recites: “a self-tapping screw threaded into said bracket, engaging said PCB, and urging said heat sink against said bracket.” The Examiner asserted that Prager teaches a screw engaging a PCB, identified as element 11 in Fig. 4 of Prager. There is no element 11 in Fig. 4. However, assuming that the Examiner meant element 22 of Prager, element 22 is a solid state device, not a PCB. A PCB comprises a printed board upon which a series of discrete components are attached, typically by soldering. For example, PCB 118 is shown in Fig. 6 of the

present application. In contrast, Prager teaches a solid state device 22. A solid state device is a totally electronic device comprising semiconductors and other electrical components. A solid state device may or may not include a PCB. Device 22 is fully encased, therefore, it is impossible to discern whether a PCB is involved.

For all the reasons noted above, Claim 8 is patentable over Sloan in view of Fairchild and further in view of Prager. Claims 9-11, dependent from Claim 8, enjoy the same distinction from the cited references. Applicants courteously request that the rejection be removed.

Claim 13

Amended Claim 13 recites is a method claim reciting the elements of: fully enclosing a heat-containing element within a potted housing and connecting a brass bracket to an interior wall of the housing. These elements parallel elements of Claim 8 that were addressed above. Applicants have shown that Claim 8 is patentable over Sloan in view of Fairchild and further in view of Prager. Therefore, Claim 13 also is patentable over Sloan in view of Fairchild and further in view of Prager. Claim 18, dependent from Claim 13, enjoys the same distinction from the cited references. Applicants courteously request that the rejection be removed.

Rejection of Claims 12 and 20 under 35 U.S.C. §103(a)

The Examiner rejected Claims 12 and 20 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,502,090 (Sloan) in view of US Patent No. 6,618,255 (Fairchild), and further in view of US Patent No. 4,288,839 (Prager et al.), and further in view of US Patent No. 5,504,653 (Murphy et al.).

Claim 12

Sloan does not teach a heat sink fully enclosed in a potted housing

Amended Claim 12 recites: “a printed circuit board (PCB) with an oscillator circuit and a heat sink, said PCB fully enclosed within said housing.” In contrast, Sloan teaches: “a combined metal head sink and mounting strap 44...” (col. 5, lines 15 and 16) “arranged so that the ends of the combined mounting strap and heat sink 44 protrude...” (col. 5, lines 21-23). This

arrangement is illustrated in Fig. 3, which clearly shows that the heat sink for Sloan is extending outside of the housing, that is, the heat sink is not fully enclosed in the potted housing.

Sloan teaches against a heat sink fully enclosed within a potted housing

These arguments are presented above and for the sake of brevity are not repeated here.

Fairchild does not teach a bracket connected to a wall of a potted housing

Amended Claim 12 recites: “a brass bracket connected to an interior wall of said housing with a rivet;” Fairchild is non-analogous to a potted housing. Fairchild teaches a fastening system for storage devices. Bracket 16 in Fairchild is not part of a heat sink assembly – it is a storage mechanism.

For all the reasons noted above, Claim 12 is patentable over Sloan in view of Fairchild and further in view of Prager and further in view of Murphy. Applicants courteously request that the rejection be removed.

Claim 20

Sloan does not teach a heat sink fully enclosed in a potted housing

Amended Claim 20 recites: “fully enclosing, within said potted housing, an oscillator circuit with a heat sink;” In contrast, Sloan teaches: “a combined metal head sink and mounting strap 44...” (col. 5, lines 15 and 16) “arranged so that the ends of the combined mounting strap and heat sink 44 protrude...” (col. 5, lines 21-23). This arrangement is illustrated in Fig. 3, which clearly shows that the heat sink for Sloan is extending outside of the housing, that is, the heat sink is not fully enclosed in the potted housing.

Sloan teaches against a heat sink fully enclosed within a potted housing

These arguments are presented above and for the sake of brevity are not repeated here.

Fairchild does not teach a bracket connected to a wall of a potted housing

Amended Claim 20 recites: “threadingly connecting a brass bracket to an interior wall of said housing;” Fairchild is non-analogous to a potted housing. Fairchild teaches a fastening system for storage devices. Bracket 16 in Fairchild is not part of a heat sink assembly – it is a storage mechanism.

For all the reasons noted above, Claim 20 is patentable over Sloan in view of Fairchild and further in view of Prager and further in view of Murphy. Applicants courteously request that the rejection be removed.

Conclusion

Applicant respectfully submits that all pending claims are now in condition for allowance, which action is courteously requested.

Respectfully submitted,



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Dated: March 9, 2006